

CLAIMS

What is claimed is:

1. A system comprising:

DSR client module for capturing speech, extracting speech features, interpreting markup content and displaying content;

DSR gateway module coupled for communication with the DSR client module, the DSR Gateway Module for receiving a markup document, interpreting tag elements of the markup document, and dynamically generating grammar from the markup document, and controlling display content navigation by speech recognition; and

DSR document server coupled for communication with the DSR Gateway Module, the DSR document server for processing requests from the DSR gateway module and for producing a markup document in response.

2. The system of claim 1, wherein said DSR client module includes at least one of an audio capturer, a feature extractor, a data wrapper and an interpreter, each of which performs a part of the function of the DSR client module.

3. The system of claim 2, wherein said audio capturer records speech, samples speech signals, and performs voice active detection or end-point detection.

4. The system of claim 2, wherein said feature extractor performs MFCC and vector quantization.

5. The system of claim 2, wherein said data wrapper performs processing of a connection request, processes events for synchronization, receives display content, and transmits speech feature data.

6. The system of claim 2, wherein said interpreter allocates tasks to the audio capturer, speech feature extractor, and data wrapper, and interprets markup document content.

7. The system of claim 1, wherein said DSR gateway module includes at least one of a server browser, a DNS server, and a utility platform, each of which performs a part of the function of DSR gateway module.

8. The system of claim 7, wherein said server browser includes at least one of a data wrapper, an HTTP wrapper, and an interpreter, each of which performs a part of the function of said server browser.

9. The system of claim 8, wherein said data wrapper parses the markup document, determines the syntax of the markup document, and consolidates the information for the server browser, and assigns tasks to the utility platform.

10. The system of claim 8, wherein said HTTP wrapper processes a markup document request and document transmission.

11. The system of claim 7, wherein said utility platform is controlled by said server browser and performs various system jobs.

12. The system of claim 11, wherein said system jobs include speech recognition, TTS conversion, dynamic grammar building, display content generation, and transmission and workload balance control.

13. The system of claim 1, wherein events are used for synchronization between said DSR client module and said DSR gateway module.

14. The system of claim 13, wherein said events include system synchronization events and content synchronization events.

15. A method comprising:

a DSR client performing front-end processing and sending speech feature data to a DSR gateway;

after receiving the speech feature data from the DSR client, the DSR gateway performs

speech recognition and various other tasks, including:

if the speech recognition result means that the DSR client should display another component of the current document, the DSR gateway sends an event to the DSR client with the identifying information of the related component, the DSR client displays this component of the current document;

if the speech recognition result decipherable, the DSR gateway sends a corresponding event to the DSR client; and

if the speech recognition result means that the DSR client needs a new document, the DSR gateway sends a DSRML request to a DSR document server; after receiving the needed DSRML document, the DSR gateway parses the DSRML document, compiles all the grammars that the speech recognition engine needs, generates display content for client, and then sends the display content to the DSR client.

16. The method of claim 15 further including synchronizing the DSR client with the SDR gateway.

17. A machine readable medium having stored thereon executable code which causes a machine to perform the steps of:

a DSR client performing front-end processing and sending speech feature data to a DSR gateway;

after receiving the speech feature data from the DSR client, the DSR gateway performs

speech recognition and various other tasks, including:

if the speech recognition result means that the DSR client should display another component of the current document, the DSR gateway sends an event to the DSR client with the identifying information of the related component, the DSR client displays this component of the current document;

if the speech recognition result decipherable, the DSR gateway sends a corresponding event to the DSR client; and

if the speech recognition result means that the DSR client needs a new document, the DSR gateway sends a DSRML request to a DSR document server; after receiving the needed DSRML document, the DSR gateway parses the DSRML document, compiles all the grammars that the speech recognition engine needs, generates display content for client, and then sends the display content to the DSR client.

18. The machine readable medium of claim 17 including synchronizing the DSR client with the DSR gateway.